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AUTHOR Otto, Wayne
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ABSTRACT

A framework for organizing instruction in reading is discussed which includes the following objectives: identification of essential skills in reading, a statement of objectives, assessment, identification of appropriate teaching/learning activities, and evaluation. The objective of instruction is to focus on what the teacher wants the children to learn, how he can tell whether they have learned it, how to go on with the teaching, and whether the outcome is what was desired. The major problem of reading research is arriving at an acceptable definition of "reading," but, whatever the definition, a number of other problems need to be solved before researchers can assume that adequate instruction in reading exists. Until this assumption can be made, research effort should not be dissipated in pursuing other than educational factors as causes of reading disability. (DI)

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Wayne Otto
Wisconsin Research and Development
Center for Cognitive Learning
University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

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EDUCATIONAL FACTORS INVOLVED IN READING DISABILITY

Pre-Convention Institute V
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The Problem

In a report dated August, 1969, a number of distinguished educators and scholars, all members of the Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders (1969), made this observation:

> ". . . differences of opinion concerning the symptomatology and etiology of reading disorders have led to a multiplicity of systems of classification of reading disorders, many of which present a logically inconsistent and confusing combination of symptomatic and etiologic criteria. Classifications offered for reading disorders appear to fall into four categories: functional, etiologic, theoretical, and nosological. Functional classifications seek to group reading disorders by

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overt symptoms of reading behavior. Etiologic classifications emphasize the presumed causes of reading disorders. Theoretical classifications are those based on hypothesized models of psychological functioning. Nosological classifications assume that some reading disorders are analogous to disease entities with a particular syndrome of symptoms and etiology." (p. 35)

The conclusion reached by the Committee was not very optimistic, for they called for answers to some difficult questions.

"This confusion will persist until certain basic questions can be answered:

1. How shall reading disorders be defined?
2. What constitutes adequate procedures for description and measurement of the various aspects of reading disorders?
3. How do family history, neurological or visual dysfunction, laterality, emotionality, etc., specifically relate to the various symptoms of reading disorders?
4. What relationship, if any, do the various symptomatic and etiologic factors have to the efficacy of procedures of instruction and remediation?" (p. 38)

My purpose is not to quarrel with the Committee's conclusion. I think the questions are important and I think that definitive answers would serve us well. Nevertheless, I am not very optimistic about getting definitive answers in the foreseeable future, largely because

I do not think we will reach the consensus required to answer the first question--How shall reading disorders be defined? We shall probably continue to dissipate our efforts by continuing to pursue the esoterica; to reject endlessly, with dreary study after dreary study, the hypotheses of charlatans; and to support--with testimonials, banquets, and conferences--the pronouncements of our popular folk heroes. But despite the pessimism, I do see a ray of hope.

Talking about the difference between "reading difficulty" and "reading disability," Samuels (1970) said:

> "Generally, a reading disability is said to exist when despite adequate instruction, absence of emotional problems which may interfere with learning, a cooperative child, and absence of sensory impairment, there is a discrepancy between the child's reading achievement level and some measure of potential ability." (p. 267).

In essence, he said that given adequate instruction and a teachable child, reading disability exists if achievement is below capacity. And indeed an assumption of adequate instruction is more often than not prominent in attempts to examine causes for reading disability. There, I believe, is the fallacy that has caused many, if not most, of our problems as we attempt to study the etiology of reading disability.

Unfortunately, Samuels went on to say that ". . . the assumption of adequate instruction is probably false in numerous instances because at the present time a complete analysis of the skills which must be mastered in learning to read has not been made." (p. 267)

I wish he hadn't said that. I wish I had. The point is, of course, that we have little basis for assuming adequate instruction in any case because we have only the foggiest of notions as to what constitutes adequate instruction in reading. Until we can assume adequate instruction we are ill advised to get very serious about seeking other explanations for reading disability.

In my opinion, we have a long, long way to go before we shall be able to assume adequate instruction in reading. In addition to the lack of definitive information regarding the critical subskills in reading, there are other equally substantial problems that stand in the way of efficient reading instruction. My purpose here is to consider some of the problems. If we can begin to come to some agreement regarding the problems, then I think we will have taken a first step toward their solution. Let us, then, examine some of the educational factors involved in reading disability.

A Framework for Organizing Instruction

I have become convinced that the primary function of teaching is to help learners focus on what they need to know. To serve this function, a teacher needs a way to organize instruction. We have devised, and described in detail elsewhere (Otto, McMenemy and Smith, in press), a framework that deals with the matter of organizing instruction. We feel that at the present time it can serve a useful purpose in some of our work (Otto and Askov, 1970); but it serves also to underscore a number of problems we must face.

The framework includes the following: identification of essential content (essential skills, in reading), statement of objectives,

assessment, identification of appropriate teaching/learning activities, and evaluation. The objective is to focus on what we want children to learn, how we can tell whether they have learned it, how to get on with the teaching, and whether the outcome is what we wanted. The credibility of assuming adequate instruction in reading is, in my opinion, largely dependent on the success with which we can provide credible components of the framework.

Essential Content. In reading instruction, essential content means essential skills. The problem here, of course, has already been pointed out by Samuels (1970). I do not think that anyone would quarrel with his observation that a complete analysis of the skills which must be mastered in learning to read has not been made.

Samuels also had this to say about the scope of the skills analysis problem:

> "Without a complete analysis of each of the subskills and concepts which must be mastered in the process of learning to read, it is difficult to understand how any instruction can be considered adequate. In the absence of a complete analysis of skills necessary for reading, there is danger that the teacher may omit teaching important skills because she does not realize they are essential; or falsely assuming that certain skills have already been mastered, she may not teach them; or she may teach non-essential skills believing they are important." (p. 267)

Samuels suggests that a Gagné-type task analysis of skills which must be taught and information regarding the sequencing of these skills is

required if reading instruction is to be improved.

Venezky and Chapman (1970) have also pointed out some of the problems in identifying the important subskills in reading. Part of their concern is reflected in the following:

> ". . . if skill A is logically defined as important for reading, but its zero-order correlation with reading success is low, or if its first-order correlation with intelligence or some other factor partialed out is low, the skill probably is not important for reading (assuming that the test for the skill is valid and produces a respectable distribution of scores). If, however, the skill is logically important and correlates significantly with reading success when other factors are partialed out, then it is a choice candidate for training . . . But although both of these conditions--a logical connection with the reading process and a significant partial correlation with reading success--are necessary for selecting a skill, they do not guarantee that the skill is basic to reading. There may exist an underlying skill, untapped in the tests, which controls this (and other untapped) skills. In general, this possibility will exist until it can be shown that training certain independent skills leads to an improvement in reading ability." (p. 19)

To tackle these and related problems, Venezky and Chapman have proposed a research and development program that focuses on critical visual and auditory, or <u>letter</u> and <u>sound</u>, skills at the kindergarten level. The aim is to identify and correct deficits in pre-reading

skills. The obvious point in the present context is that up to the present time there have been very few systematic attempts to pin down critical skills.

While I believe that the approach taken by Venezky and Chapman is eminently sensible, I have been involved in a project where the approach has been somewhat different. (But I hasten to add that I think that it, too, is reasonably sensible.) In our project, we have elected to start with an array of reading skills that have the consensual support of reading teachers and specialists (Otto & Askov, 1970a; Otto & Askov, 1970b). The aim is to provide teachers with the necessary components to implement a skill-centered, skill-mastery approach to reading instruction. Essentially, we are attempting to test the hypothesis that a successful skill development focus in reading instruction will result in improved overall reading achievement. Because we are dealing systematically with carefully defined skills we expect also to learn a great deal about the relative importance of specific skills, about significant gaps in our list of skills, and about proper sequencing of skill development. We expect to be able to improve the system because we know what the system amounts to in terms of specific skills and skill development. In general, this has not been the case in the past.

Other work is, of course, also being done. The point is, however, that at this moment in time the bulk of the work remains to be done. The adequate instruction hypothesis gets little support in terms of the credibility of the essential skills component of our framework.

Statement of objectives. The statement of objectives is, of course, inextricably tied to the identification of skills. The former proceeds from the latter. But if we could assume for the moment that all of the critical skills had been identified, the problem of stating adequate objectives would still remain.

Adequate objectives, in my opinion, are stated in behavioral terms. They (1) identify and describe behaviors considered appropriate to a desired outcome, and (2) establish criterion levels for acceptable performance. In a basic skill area like reading, such objectives should--again, in my opinion--specify mastery levels for for performance; that is, every pupil should be expected to demonstrate functional mastery of each objective. Mastery learning is gaining solid support in all areas from such people as Bloom (1968), Bruner (1960), Carrol (1963), and Mayo (1970); and I am convinced it is imperative in the basic skill areas, where the foundations are laid for virtually all subsequent school-related learning.

But again, at this moment in time we have only begun to scratch the surface with regard to the statement of objectives for mastery learning. A comment by McNeil (1969) hints at the complexity of the task: "Borrowing the most promising ideas from many such as Carrol, Skinner, and Glaser, Bloom demonstrated a model which clearly indicates that if students are normally distributed with respect to aptitude and if the kind and quality of instruction and the amount of time available for learning are made appropriate to the characteristics and needs of each student, the majority of students can be expected to achieve mastery of the subjects." (p. 307) Mind you

now, what Bloom demonstrated was a model that suggests that mastery learning is possible; he did not trouble himself--nor has hardly anyone else to any significant extent--with the mind boggling realities of making the kind and quality of instruction that is appropriate to each student available at the proper pace. But until we do get a fairly tight line on just those kinds of things, the assumption of adequate instruction will remain the siren song that it always has been. And it seems to me that we must approach the task by stating objectives in behavioral terms and by carefully establishing performance criteria to insure mastery.

Assessment. Baker (1969) has made some points that are relevant to the assessment component of our framework:

> "A behavioral objective and a criterion referenced test constitute the beginning and end of an instructional segment . . . The emphasis on mastery and the reflection of student performance against an absolute criterion make many of the conventional psychometric procedures inappropriate . . . Because current tests seek to measure individual differences among pupils taking the test, the tests concentrate on items which differentiate the children. Very difficult and very easy items are eliminated because they do not afford sufficient discrimination. Conventional norm reference tests are designed to maximize the variability among those tested; criterion referenced tests are designed to minimize inter-subject variance and to focus on the specified learned behaviors of the students

> tested. Associated problems related to item construction, the reliability and validity concepts and interpretation of data from criterion referenced tests, need considerable attention from psychometric specialists." (pp. 351-352)

While I hasten to acknowledge that some very legitimate observations regarding limitations of criterion referenced tests have been made, e.g., Prescott (1971) and Johnson and Kress (1971), the point here is that criterion referenced tests assume critical importance in our framework for organizing instruction. The framework is built on a foundation of essential skills and the concept of mastery learning is implicit. Mastery is best assessed with criterion referenced tests. But, as Baker pointed out, the problems attendant to the construction and interpretation of criterion referenced tests still need considerable attention from psychometric specialists. Thus, the need to develop still another component if we are to continue the quest for adequate instruction is quite clear.

Identification of appropriate teaching/learning activities. So we move at last to the instruction component of our framework. This is where any remaining true believers in the doctrine of adequate instruction are put to their severest test. If the identification of essential skills is mostly an act of faith, if stating behavioral objectives is a foray into Fantasyland, if criterion referenced tests are a promise of things to come, then the identification of appropriate teaching/learning activities is the essence of all those things. We have virtually no definitive knowledge regarding the matching of students and instruction.

Frieder (1970) put it this way: "Many alternatives are currently available to the prescriber in the areas of media and strategies; but despite the advances in diagnosis and instruction, research has provided little concrete information about the prescriber's task--putting diagnosis and instruction together to reach objectives." (p. 29) And so necessity makes eclectics of us all. We move from the technology of instruction to the art of teaching, and that, I have always believed, is the "way it 'spoze' to be."

Nevertheless, I am troubled. Recently I was introduced to a medical term--iatrogenic--that was new to me. Iatrogenic disease is disease produced by the doctor. What bothers me is the possibility of iatrogenic reading disability--reading disability produced by the teacher. Regarding iatrogenic disease, this is the advice given to a group of medical doctors, "Gentlemen, in the practice of medicine, for God's sake at least do as little harm as possible." (Means, 1963, p. 20) We can extrapolate the advice we need for reading teachers.

But we can get a bit more specific. The literature is filled with questions to be answered and problems to be solved before we can get on with efficient instruction or, at least, doing as little harm as possible. I shall give a few rather arbitrarily, but not casually, chosen examples.

McGinley and McGinley (1970) recently reported a study designed to determine whether reading groups develop into groups in the psychological sense. Their position was that instructional groups have not been studied as social structures with behavior patterns that may affect reading development. Without going into the details of the

study, the main implications the authors drew from the data were these:

> "Since high group cohesiveness has been shown to facilitate learning, and low group or lack of group cohesiveness has been shown to be related to decreased facilitation of learning or to inhibit learning, the direct implications of this study are: (1) ability grouping in reading facilitates the top reading groups; (2) ability grouping in reading facilitates the learning of reading in the lower reading group, and (3) ability grouping in reading is either slightly facilitating or slightly inhibiting to the learning of reading in middle reading groups." (p. 41)

Apparently we have still another reason to question one of our most venerable practices in reading instruction. While the present implications are still tentative, the possibility of another factor in "iatrogenic reading disability" is clear.

Fredrick and Klausmeier (1970) examined the matter of cognitive styles in both learners and teachers. They suggested that the research base is beginning to be sufficiently sound to permit translation into practice, but their main conclusion was this:

> "Possibly one goal to attain, in the absence of firm knowledge about cognitive styles and related instructional practices, should be to help the student acquire and use alternatives, rather than only one method or approach. The student may then learn when a global approach is desirable and when an analytic one is necessary, in what

> situations gaps can be tolerated, when to be flexible, when to diverge, when to converge, and the like. These are all dimensions of cognitive style that hold considerable promise for research, development, and practice." (p. 672)

Promising, yes; but at the present time still no tangible support for the assumption of adequate instruction.

So we see that with regard to such basic matters as grouping and choosing the style most appropriate for a given teacher-pupil interchange, the surface has barely been scratched. With regard to materials, too, the scratches are rather superficial. Take, for example, Samuels' (1970) survey of the effects of pictures on learning to read, comprehension and attitides. This is what he concluded:

> "Should pictures be used as adjuncts to printed text? The answer depends on the objectives. If the objective is to promote acquisition of sight vocabulary, the answer would seem to be "no." If the objective is to facilitate comprehension, the answer is less definite: Although the research, in general, does not show that pictures aid comprehension, neither does it show that it hinders comprehension. Much research still needs to be done on the effect of pictures on attitudes." (p. 405)

Samuels went on to speculate about a possible dilemma. What if pictures do help to build favorable attitudes toward reading? Then would we exclude pictures to facilitate learning to read, or include pictures to facilitate learning to like it?

In any event, the lack of definitive information regarding a

thing so mundane as the role and function of pictures in reading materials is indicative of the state of the art. We have not made up our minds about such basic matters as whether regularity or variability in grapheme-to-phoneme correspondences ought to be stressed in beginning reading materials; or, indeed, whether decoding or meaning should be given primary stress. Small cause to look beyond educational factors for the causes of reading disability.

Nor is Durkin's (1970) recent review of the research regarding the time to begin reading instruction very encouraging. These are her main conclusions:

> ". . . if readiness is dependent both on the child's abilities and, as Ausubel has phrased it, on 'the demands of the learning task,' then future research efforts ought to go in the direction of (a) assessing more successfully than has been done up to now the relevant abilities of each child; (b) identifying the possible methodologies for reading as well as the learning demands of each; and (c) helping teachers match children in terms of their abilities, with methodology in terms of what it requires of the learner. It must also be emphasized that, once these basic tasks have been done, it is only longitudinal studies that will be able to pass judgment on their success." (pp. 55-56)

The task, as Durkin put it, is staggering. But her point is well taken. If we are indeed concerned about adequate instruction, then we ought indeed to be concerned about gathering the information that

will permit us to match pupils and methods much more efficiently than we do now.

Glaser (1967) had an aspect of the same problem in mind when he pointed out that psychologists may have been paying too much attention to the general laws of learning and not enough to individual differences. As Bracht has suggested Cronbach (1957) had it all together when, in his APA presidential address, he ". . . encouraged psychologists in the experimental and correlational disciplines to combine their interests and methods to observe experimental effects for subjects of different characteristics and to conduct investigations to find aptitude-treatment interactions (ATIs)." (Bracht, 1970, p. 627) The goal of ATI research, as Bracht puts it, ". . . is to find significant disordinal interactions between alternative treatments, i.e., to develop alternative instructional programs so that optimal educational payoff is obtained when students are assigned alternative programs." When we reach that goal--which I sincerely hope is not a pot of gold at the end of the rainbow--we will be on firm ground when we seek other than educational factors as prime causes for reading disability.

Zedler (1970), too, was speaking to the point when she discussed the matter of better teacher training as a solution to children's reading problems. She pointed out, among other things, the paradox inherent in training teachers in a remedial capacity to serve pupils who have failed to learn when the same teachers might preferably have been trained to prevent such failures in the first place. Elimination of the paradox, she feels, will require that teacher training institutions do a better job of producing teachers with the competence

required to recognize and meet individual differences. Her point is well taken, as is her additional point that the emphasis in teacher training ought to move from "how to teach children to read" to be more fundamental "how children learn to read." (p. 108)

The goal, Zedler says, is prevention rather than remediation. Thus, teachers of reading ought to be prepared to teach at the kindergarten and primary levels. And, in summing up, she makes these points:

> "Student-teachers should first acquire a broad eclectic background of knowledge from which they can develop frameworks for understanding: a) children who learn normally and those who do not, b) the nature of language, c) the process of learning itself, and d) the pathologies of language and learning. Out of such knowledge student-teachers should develop skills: a) in evaluating learning abilities; b) in regular, diagnostic, and therapeutic teaching; c) in relating to and strengthening the self-concepts of children with learning problems; d) in communicating with related professions; and e) in evaluating and participating in high-quality research. During the development of these specific skills student-teachers should be skillfully supervised by college and university professors with high degrees of competence in the areas in which they supervise." (p. 111)

Clearly, the challenge is to the teacher training institutions. Most professionals would agree, however reluctantly, that many existing training programs have only begun to pursue the goals outlined.

Again, until we reach those goals, educational factors will continue to loom large as causes for reading disability.

I could, of course, continue this recitation of questions to be answered and of problems to be solved. But the point may already be overmade: the identification of appropriate teaching/learning activities continues to present us with some problems. Lest I be accused of being overly pessimistic, I hasten to add that I believe the problems have been tackled by good people and that progress is being made. Nevertheless, until the problems are solved we do not need to look beyond educational factors for the prime causes of reading disability.

Evaluation. Finally we come to the evaluation component of our framework. Evaluation is important because it permits us to examine the end product, the pay-off for our efforts. It is particularly important in the present context because to a large extent what we want in terms of pay-off dictates what goes into each of the related components. Define reading as "a reconstitution of sound forms" (Elkonin, 1963) and you have rather different expectations regarding factors contributing to reading disability than if you define reading as a thoughtful process that involves thinking, evaluating, judging, imagining, reasoning and problem solving. (The latter definition is from the 48th Yearbook of the National Society for the Study of Education.) Or, define reading as a political activity, as Postman (1970) has, and you have expectations that have not even been contemplated in the present paper. Consider Postman's charge to reading teachers:

> "I want to close on this thought: teachers of reading represent an important political pressure group. They may not agree with me that they are a sinister political group. But I should th[illegible] they would want to ask at least a few questions before turning to the techniques of teaching reading. These questions would be: What is reading good for? What is it better or worse than? What are my motives in promoting it? And the ultimate political question of all. 'Whose side am I on?'" (p. 252)

So if we go with Postman we have not only educational factors to consider but political and ideological factors as well.

Downing (1969/1970, p. 9) put it this way: "Often teachers and reading experts speak and write about 'reading' without defining or discussing what they mean by it, and seem to assume that everybody else shares their own concept as to what 'reading' is. It is hardly surprising, therefore, that some of the controversies and debates in this field take place on a rather primitive egocentric level." Hardly surprising, indeed, that in the field of reading so many of our tempests are confined to teapots. Hardly surprising that the educational factors involved in reading disability continue to elude us, despite the right to read moonshot of the seventies.

As I suggested at the outset, arriving at an acceptable definition of "reading" will probably continue to be our biggest problem. But whatever the definition, I think we have a number of other problems to solve before we can assume adequate instruction in reading for any child. Until we can make such an assumption, we ought not to dissipate

much of our effort in pursuing other than educational factors as causes of reading disability.

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